

Technical Report #10

Thompson River Basin Ecological Classification

Overview

Effective land management requires an understanding of climate, geology, vegetation patterns, landforms, soils, and streams. Ecological classification provides a framework and descriptive attributes from which interpretations regarding habitats and effects of land uses can be made. The purpose of Technical Report #10 is to apply the classification to the Thompson River Basin in northwest Montana. This classification can be used as a tool to assess the ecological potential and the existing condition of riparian habitat.

Key Points

The table below identifies the levels of hierarchy used to classify the Thompson River Basin.

Ecoregion	
Geologic District	
Subsection	
Uplands	Bottom-Lands
Landtype Association	Valley-Bottom Landtype
Landtype	Valley-Bottom Type
Habitat Type	Valley Bottom Landform
Vegetation Type	Riparian Vegetation Type

For more information about the definitions of each of these classification levels, see Technical Report #4, *An Ecological Classification Integrating Uplands and Riverine/Riparian Habitats Applied to the Thompson River Basin, Montana*.

Supporting Technical Information

The Thompson River Basin falls within a single **ecoregion** (Northern Rockies). This ecoregion includes parts of two sections of the Northern Rocky Mountain Forest–Steppe–Coniferous Forest–Alpine Meadow Province:

1. Flathead Valley section
2. Belt Mountain section

A single **geologic district** was identified (metasedimentary). Four **subsections** were defined by geologic structure including alpine glaciated lands, fluvial lands, continental glaciated erosional lands, and continental glaciated depositional lands. These subsections are further divided into **landtype associations**, as follows:

- 1) Alpine glaciated lands
 - a) Cirque and rocky ridge
 - b) Glacial basin
 - c) Glacial trough
 - d) Moraine
- 2) Fluvial lands
 - a) Mountain ridge
 - b) Mountain slope
 - c) Breakland
- 3) Continental glaciated erosional lands
 - a) Continental glacial ridge and slope
- 4) Continental glaciated depositional lands
 - a) High terrace
 - b) Floodplain and alluvium

Landtypes, a subset of landtype associations, were mapped by the Kootenai and Lolo National Forests. More detailed

mapping of soil types was conducted by the Natural Resource Conservation Service (NRCS) for private lands in the basin.

The **valley-bottom landtype** associated with streams was further divided into **valley-bottom types**, which generally correlate with subsections. Valley-bottom **habitat types** were also mapped.

Vegetation response units, which are similar to habitat type and landtype association, were also identified.

Conclusion and Implications

A Geographical Information System (GIS) was used to compile the land classification on map layers, plot maps, and create map data summaries. Maps, descriptions, and data summaries are provided in this technical report for each hierarchical level.

Ecological classification is a tool to organize landscapes into areas with distinctive ecological potential. In the Thompson River Basin, results of the classification are being used to group upland and riverine/riparian habitats, assess the similarity of watersheds, screen for landscape hazards, and provide a foundation for more intensive watershed analysis.